REMARKS

Reconsideration of the present application is respectfully requested.

In the Office Action, claims 1-3, 9-11, 13, 15, 17, 19, 21 and 23-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 6,078,879 (taori). Further, claims 4, 5, 12, 14, 16, 18 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over taori in view of U.S. 5,647,005 (Wang). In addition, claims 6-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over taori in view of Wang and further in view of Sluijter ("a Time Warper for Speech Signals," Proceedings of IEEE Workshop on Speech Coding Proceedings. Model, Coders, and Error Criteria, Porvoo, Finland, 20-23, June 1999, pages 150-152).

Applicants respectfully traverse these rejections and submit that claims 1-26 are patentable over Taori, Wang and Sluijter for at least the following reasons, where also the prior arguments are incorporated herein by reference.

Taori shows an encoder in FIG 2 that outputs signals through a multiplexer 22 to a decoder shown in FIG 7. On pages 2-3 of the Office Action, it is alleged that column 4, lines 45-48 and 55-58,

column 12, lines 4-9, and FIGs 3, 32 and 34 of Taori teach frequency change determining means. In particular, it is alleged that the analysis means of the Taori encoder contains Pitch tuning means that determines frequency change, referred to the Pitch Range computer and the Refined Pitch Computer.

It is respectfully submitted that the cited sections of Taori do not teach or suggest frequency change determining means for determining a frequency change. Rather, the very same cited section, namely, column 12, lines 4-9 specifically recites:

> "pitch tuning means **for tuning** a fundamental frequency (pitch) ... so as to minimize the difference between a representation of said speech signal and a representation of said plurality of harmonically related signal components" (emphasis added)

It is respectfully submitted that the Taori pitch tuning means is for tuning a fundamental frequency. There is simply to disclosure or suggestion in Taori of an encoder having frequency change determining means for determining a frequency change.

Assuming, arguendo, that Taori teaches an encoder that 'could' generate a frequency change signal, there is still no teaching or suggestion of using any such frequency change signal by the decoder to derive the audio signal, as recited in independent claims 1, 9, 13, 15, 17, 19, 21 and 25. The pitch tuning means is used to

minimize a difference, not to derive an audio signal. No such frequency change signal is shown or suggested from the signals exchanged between the Taori encoder of FIG 2 and decoder of FIG 7. Rather, as seen form FIGs 2 and 7, the encoder of Taori transmits to the decoder LPC codes, gain, and refined pitch. There is simply no teaching or suggestion of an encoder which provides a frequency change of the audio signal to be used by a decoder for deriving the audio signal, as recited in independent claims 1, 9, 13, 15, 17, 19, 21 and 25.

The signals provided by the Taori encoder 4 (FIG 2) to the decoder 14 (FIG 7), namely, the representations of the voiced and unvoiced speech signals, which representations are the gain and LPC codes for both the voiced and unvoiced speech signals, as well as the refined pitch for the voiced speech signal, do not include a frequency change signal to be used by the decoder for deriving the audio signal, as recited in independent claims 1, 9, 13, 15, 17, 19, 21 and 25.

The Examiner correctly notes (e.g., on page 3, first paragraph of the Office Action) that Taori:

> fails to explicitly disclose the frequency change be used by said decoder for deriving said reconstructed audio signal. However ... it would have been obvious ... to modify the method of

> Taori wherein the frequency change is used by the decoder for deriving said reconstructed audio signal because a decoder's main function is to reconstruct a signal that passes through an encoder with the same parameters that the encoder used to encode the signal. (Emphasis added)

Assuming, arguendo, that Taori teaches an encoder that forms a frequency change signal, then based on the obviousness reasoning noted above, why isn't such a frequency change signal not used by the Taori decoder to construct the signal? The answer is clear, namely because there is no teaching or suggestion in Taori of an encoder that forms a frequency change signal; otherwise (based on the Examiner's own obviousness arguments) Taori would have used the frequency change signal in a decoder to reconstruct the signal.

The facts are that the signals provided by the Taori encoder 4 (FIG 2) to the decoder 14 (FIG 7), merely include gain, LPC codes and refined pitch. There is no teaching or suggestion in Taori to form a frequency change signal to be used by the decoder for deriving the audio signal, as recited in independent claims 1, 9, 13, 15, 17, 19, 21 and 25. If the Examiner persists on insisting that the Taori pitch tuning means, pitch range computer or refined pitch computer forms a frequency change signal, then it is respectfully requested that the Examiner point out with

specificity, using column and line numbers, where exactly does Taori teach or suggest that the its pitch tuning means, pitch range computer or refined pitch computer forms a frequency change signal.

Wang and Sluijter are cited to show compression/expansion of the audio signal, and selection of highest peak in the autocorrelation function, and do not remedy the deficiencies in Taori. Accordingly, it is respectfully submitted that independent claims 1, 9, 13, 15, 17, 19 and 21 be allowed. In addition, as claims 2-8, 10-12, 14, 16, 18, 20 and 22-26 depend from independent claims 1, 9, 13, 15, 17, 19 and 21, applicants respectfully request that claims 2-8, 10-12, 14, 16, 18, 20 and 22-26 also be allowed over the prior art of record.

In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any informalities remain, the Examiner is requested to telephone the undersigned in order to expedite allowance.

Please charge any fee deficiencies and credit any overpayments to Deposit Account No. 14-1270.

Respectfully submitted,

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On April 29, 2004
By Natali De Marco